

## CHARGING CIRCUIT IN UNINTERRUPTIBLE POWER SUPPLY SYSTEM

### ABSTRACT OF THE DISCLOSURE

A charging circuit in a back-up power system is disclosed. The charging circuit includes an output terminal electrically connected to a main power for providing an AC output voltage, a transformer having a secondary electrically connected to the output terminal, an electrical energy storage and supply device providing a DC current, an inverter having an output end electrically connected to a primary of the transformer and an input end electrically connected to the electrical energy storage and supply device and comprising four gate control switch devices to form a bridge switching device, wherein the four gate control switch devices respectively have an anti-parallel diode, a first diode having an anode electrically connected to one output terminal of the bridge switching device, a second diode having an anode electrically connected to the other output terminal of the bridge switch device, and a charging switch device having a first conducting terminal electrically connected to a common cathode of the first and the second diodes and a second conducting terminal electrically connected to a negative electrode of the electrical energy storage and supply device so as to charge the electrical energy storage and supply device through a conduction and a cut-off of the charging switch device.